REMARKS

Introduction

Applicants acknowledge receipt of the final Office Action dated March 17, 2009. Claims 1 – 32 are pending herein. Claims 12 – 14 and 30 – 32 stand withdrawn from consideration. Claims 1-11 and 15-29 stand rejected.

With the present Reply, Applicants amend claim 6 to correct the spelling of "herbicide" within the phrase "isoxazole herbicides." No new matter is added.

Rejection of Claims Under 35 U.S.C. §103(a)

Applicants respectfully traverse the § 103 rejections of claims 1 – 11 and 15 – 29 as being unpatentable over Hacker et al (US 2003/0186816) in view of various combinations of the secondary references to Koltzenburg et al. (US 2007/0122436), Nabors et al (US 2005/0233907) and Cornes (US 6,924,250). The problem addressed by the present invention is the provision of a suspension concentrate or suspoemulsion formulation comprising mesotrione which exhibits improved physical storage stability, handling and in particular dilution characteristics. This problem is solved by the present invention by providing such a formulation wherein the mesotrione therein has an average and median particle size of less than 1 micron.

As noted by the Examiner, Hacker et al. (Hacker) relates to 3-way (component A, B and C) herbicide combinations comprising specific sulfonylurea herbicides. Component C may be one of 57 compounds, of which mesotrione just happens to be one (compound C8). Hacker further discloses that the herbicidal composition may (amongst others) be provided as a suspension concentrate (SC) or a suspoemulsion (SE). There is no specific teaching, however, in Hacker of a suspension concentrate or suspoemulsion comprising mesotrione. As such, without recognition of the problem at issue, there can be no suggestion of a solution.

Koltzenburg et al. (Koltzenburg) relates to a nanoparticulate formulation comprising at least one active compound. Mesotrione just happens to be one of a vast number of the "active compounds" compounds contained within the substantial "boilerplate" provided. In fact, based on the examples provided by Koltzenburg, the invention is primarily directed towards fungicide compositions (paragraph 0059), in particular those comprising pyraclostrobin (paragraph 74). There

is no particular focus on herbicides, let alone mesotrione or even sub-micron mesotrione formulations. Accordingly, one of ordinary skill would have no reasonable expectation that combining the teachings of Hacker and Koltzenburg would provide a suspension concentrate or suspoemulsion formulation comprising mesotrione with improved physical storage stability, handling and, in particular, dilution characteristics because neither reference is specifically concerned with such formulations.

Although Koltzenburg does make the general point (paragraph 0004) that solubility, dispersibility and (in particular) bioavailability of active compound particles can be increased by expanding the particle surface area, the dilution characteristics of an herbicidal agent are not specified. Such characteristics within a formulation are not predictable and are governed by rheological behavior of particular formulations (which can be dictated by a number of factors including but not limited to: disperse phase volume, particle size, particle shape, uniformity of particle size distribution, particle surface energy, presence of more than one disperse phase, presence of surfactant(s), presence of humectants, and presence of dispersed polymers) and not necessarily by particle size alone.

The Examiner reasons that one would have been motivated to make the claimed combination in order to receive the expected benefit of increasing the solubility, dispersibility, and bioavailability of the active compound particles due to reducing the particle size. Applicants respectfully submit that in reaching a conclusion of obviousness, the Patent and Trademark Office must consider the "invention as a whole," which includes evidence of the invention's unexpected results. See In re Margolis, 228 USPQ 940 (Fed. Cir. 1986). Specifically, with regard to mesotrione containing formulations, the experiments and data referred to in Table 2 of the description show the redispersion properties of sediment material and how these are improved when sub-micron mesotrione is used. In the sediment, the particle phase volume is very high and the redispersibility is not governed by particle size per se. While Applicants agree that a smaller particle size is known to enhance dispersibility of such particle, more time is required for the smaller particles to settle from the dispersion. Once settled, however, smaller particles are generally more difficult to re-disperse. As shown, for example, in table 1 of the specification, the composition of the present invention is easier to re-disperse than a similar composition having larger particles. This result is both surprising and unexpected. Thus, Hacker and Koltzenburg not only fail to relate to the problem solved by the presently claimed composition but Hacker and Koltzenburg do not suggest or predict the basis of the instant technical success.

Finally, the Examiner disagrees that one of ordinary skill would have no reasonable expectation that combining the teachings of Hacker and Koltzenburg provide a suspension concentrate or suspoemulsion formulation comprising mesotrione with improved physical storage ability, handling and dilution characteristics since neither reference is concerned with such formulations. The Examiner's contentions are based on the lack of recitation of these features in the rejected claims. Applicants believe the recitation of such characteristics is not necessary for patentability for the claimed suspension concentrate and suspoemulsion formulations.

In summary, the problem addressed by the present invention (i.e., provision of a suspension concentrate or suspoemulsion formulation comprising mesotrione which exhibits improved physical storage stability, handling and in particular dilution characteristics) is not obvious in view of Hacker and Koltzenburg. Neither reference is specifically concerned with mesotrione formulations. Further, neither reference provides teaching regarding the formulation properties of this particular herbicide that would motivate the skilled person to combine them. The benefit of hindsight has allowed the Examiner to mosaic the teachings of either document in the manner suggested in order to arrive at the present invention. The secondary references to Nabor and Cornes also do not remedy the deficiencies of Hacker.

In view of the above remarks, Applicants submit that the present claims are allowable over the cited art. Withdrawal of all rejections is respectfully requested, along with issuance of a Notice of Allowance. Applicants invite the Examiner to telephone the undersigned attorney of record if the Examiner feels that the call will be beneficial to advance prosecution of the application.

Respectfully submitted,

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